POLYMERIC ADDITIVES AND POLYMERIC ARTICLES COMPRISING SAID ADDITIVE

Abstract of the Invention

We have developed a process and product which provide thermoplastic articles featuring a permanent outer surface which has selectively varied chemical functionality while maintaining the inherent mechanical properties of the base fiber. The process comprises the steps of:

(a) adding a substantially organic molten component with CSP value of at least 0.8 to a molten thermoplastic polymer and mixing to substantially uniformly disperse the molten component in the molten thermoplastic polymer and form a heterogeneous blend wherein

(i) the melt viscosity of the molten component is substantially less than the melt viscosity of the molten thermoplastic polymer; and

(ii) the amount of the molten component in the molten thermoplastic polymer is up to about ten percent by weight based on the heterogeneous blend; and

(b) melt processing the heterogeneous blend wherein the molten component preferentially locates near the surface of the molten thermoplastic polymer and substantially no chemical reaction occurs between the molten component and the molten thermoplastic polymer.

The present invention provides specific surface activating polyamide (Formula (I)) and polyolefin (Formula (II)) additives.

These additives may be used in thermoplastic polymers and more preferably in polyester. The resulting thermoplastic blend may be used to make articles, preferably fiber, and more preferably industrial fiber.